

AMENDMENTS TO THE CLAIMS:

Claims 1-5, 7-15, 17-41, and 43-48 were pending at the time of the Office Action.

Claims 6, 16, and 42 have previously been cancelled.

Claim 23 is currently being amended.

Claims 1-5, 7-15, 17-41, and 43-48 remain pending.

1. (Previously Presented) A system, comprising:

a lift device including a drive assembly;

at least one first sensor attached to the lift device adapted to sense an object above the lift device, wherein the at least one first sensor includes at least one optical proximity detector, at least one through-beam emitter, and at least one through-beam receiver detector; and

a controller operatively coupled to the at least one first sensor and operatively coupled to the drive assembly of the lift device and adapted to interrupt operation of the drive assembly when the lift device at least one of approaches and or touches the object.

2. (Original) The system of Claim 1, wherein the at least one first sensor includes a through-beam emitter and a through-beam receiver.

3. (Original) The system of Claim 1, wherein the at least one first sensor includes an optical proximity detector.

4. (Original) The system of Claim 1, wherein the at least one first sensor includes an ultrasonic proximity detector.

5. (Original) The system of Claim 1, wherein the at least one first sensor includes a contact switch.

6. (Canceled)

7. (Original) The system of Claim 1, further comprising:
at least one second sensor operatively coupled to the controller, the at least one second sensor adapted to sense the object to at least one of a side and an end of the lift device.
8. (Original) The system of Claim 7, wherein the at least one second sensor includes a through-beam emitter and a through-beam receiver.
9. (Original) The system of Claim 7, wherein the at least one second sensor includes an ultrasonic proximity detector.
10. (Original) The system of Claim 7, wherein the at least one second sensor includes a light curtain emitter and a light curtain receiver.
11. (Original) The system of Claim 1, further comprising:
at least one display linked to the controller, the at least one display adapted to indicate a presence of the object proximate to the lift device.
12. (Previously Presented) A system for controlling a lift device, the system comprising:
at least one hand control adapted to control the lift device;
at least one drive adapted to move the lift device;
at least one controller operatively coupled to the at least one hand control and to the at least one drive, the controller adapted to interrupt operation of the at least one drive when the lift device at least one of approaches and touches an object;
at least one first sensor operatively coupled to the controller, the at least one first sensor adapted to sense at least one of an approach to and a contact with an object above the lift device, and to transmit a corresponding detection signal to the controller, wherein the at least one first sensor includes at least one optical proximity detector and at least one through-beam detector.
13. (Original) The system of Claim 12, wherein the at least one first sensor includes a through-beam emitter and a through-beam receiver.

14. (Original) The system of Claim 12, wherein the at least one first sensor includes an ultrasonic proximity detector.

15. (Original) The system of Claim 12, wherein the at least one first sensor includes a contact switch.

16. (Canceled)

17. (Original) The system of Claim 12, further comprising:

at least one second sensor operatively coupled to the controller, the at least one second sensor adapted to sense at least one of an approach to and a contact with an object to a side and an end of the lift device, and to transmit a corresponding detection signal to the controller.

18. (Original) The system of Claim 17, wherein the at least one second sensor includes a through-beam detector.

19. (Original) The system of Claim 17, wherein the at least one second sensor includes an ultrasonic proximity detector.

20. (Original) The system of Claim 17, wherein the at least one second sensor includes a light curtain emitter and a light curtain receiver.

21. (Original) The system of Claim 12, further comprising:

at least one display linked to the controller, the at least one display adapted to indicate a presence of the object proximate to the lift device.

22. (Previously Presented) A system for controlling a lift device, the system comprising:

at least one hand control adapted to control the lift device;

at least one drive adapted to move the lift device;

at least one controller operatively coupled to the at least one hand control and to the at least one drive, the controller adapted to interrupt operation of the at least one drive when the lift device at least one of approaches and touches an object;

at least one first sensor operatively coupled to the controller, the at least one first sensor adapted to sense at least one of an approach to and a contact with an object above the lift device, and to transmit a corresponding detection signal to the controller;

and

at least one display linked to the controller, the at least one display adapted to indicate a presence of the object proximate to the lift device, wherein the at least one display includes a directional display adapted to display a direction the lift device will move if the at least one drive is activated.

23. (Currently Amended) A system device for sensing objects, the device comprising:

a moveable platform having a drive assembly;

a module coupled to the platform and including ~~adapted to hold~~ a plurality of sensors, the plurality of sensors including:

at least one first sensor configured ~~attached to the module~~ adapted to sense objects proximate to the system device;

at least one through-beam receiver configured ~~attached to the module~~ adapted to receive a light beam that may be interrupted by the proximity of objects; and

at least one through-beam emitter configured ~~attached to the module~~ adapted to emit a light beam that may be interrupted by objects proximate to the module;

a controller operatively coupled to the module and to the drive assembly, the controller configured to interrupt operation of the drive assembly in response to a detection signal from the module; and

a display coupled to the drive assembly and configured to indicate a presence of the object proximate to the lift device, and further configured to indicate a direction drive assembly will move the platform if activated.

24. (Original) The system of Claim 23, wherein the at least one first sensor includes an ultrasonic proximity detector.

25. (Original) The system of Claim 23, wherein the at least one first sensor includes an optical proximity detector.

26. (Original) The system of Claim 23, wherein the at least one first sensor includes a contact switch.

27. (Original) The system of Claim 23, further comprising:

a contact switch linked to the module, the contact switch arranged to detect an object touching the module.

28. (Original) A system for sensing objects proximate to a surface, the system comprising:

a plurality of modules attached to a surface, each module adapted to hold a plurality of sensors, each module including at least one first sensor attached to the module adapted to detect objects proximate to the module and to transmit a corresponding first detection signal, at least one through-beam receiver attached to the module adapted to detect a light beam that may be interrupted by the proximity of objects and to transmit a corresponding second detection signal, and at least one through-beam emitter attached to the module adapted to emit a light beam that may be interrupted by the proximity of objects, the plurality of modules positioned with respect to the surface with the at least one through-beam emitter of a module being in optical communication with the at least one through-beam receiver of an adjoining module, and to transmit a corresponding third detection signal;

a processor operatively coupled to the at least one first sensor and the at least one through-beam receiver attached to each of the plurality of modules, the processor adapted receive the first, second, and third detection signals, and output an indication of the proximity of an object to the surface.

29. (Original) The system of Claim 28, wherein the at least one first sensor includes an ultrasonic proximity detector.

30. (Original) The system of Claim 28, wherein the at least one first sensor includes an optical proximity detector.

31. (Original) The system of Claim 28, wherein the at least one first sensor includes a contact switch.

32. (Original) The system of Claim 28, further comprising:
a plurality of contact switches, each contact switch linked to one of the plurality of modules, each contact switch arranged to detect an object touching one of the plurality of modules .

33. (Original) A display system, comprising:
a lift device including a steering mechanism,
a direction indicator operatively connected to the steering mechanism, the direction indicator adapted to indicate an angle the steering mechanism is oriented;
at least one sensor device adapted to detect a presence of an object proximate to the lift device; and
at least one proximity display operatively connected to the at least one sensor device, the at least one proximity display adapted to indicate the presence of an object proximate to the lift device detected by the at least one sensor device.

34. (Original) The system of Claim 33, wherein the at least one sensor device includes a through-beam sensor device, and the at least one proximity display includes at least one line of lights indicating the presence of an object proximate to the lift device detected by the through-beam sensor device.

35. (Original) The system of Claim 33, wherein the at least one sensor device includes a through-beam sensor device and wherein the at least one proximity display includes at least one line of icons indicating the presence of an object proximate to the lift device detected by a through-beam sensor device linked to the proximity display.

36. (Original) The system of Claim 33, wherein the at least one sensor device includes a proximity sensor and wherein the at least one proximity display includes at least one icon indicating the presence of an object proximate to the lift device sensed by the proximity sensor linked to the proximity display.

37. (Original) The system of Claim 33, wherein the direction indicator further indicates a lateral direction the lift device will move if a propulsion device driving the lift across the a supporting surface is engaged.

38. (Previously Presented) A method for controlling a lift device, comprising:
providing a sensor module adapted to monitor a plurality of scanning regions proximate the lift device for the presence of an approaching object and to detect the approaching object prior to physical contact with the approaching object, wherein at least two of the scanning regions are approximately orthogonally disposed relative to each other; and
monitoring the plurality of scanning regions for an approaching object;
moving at least a portion of the lift device using a drive assembly;
detecting an approaching object within at least one of the scanning regions proximate to the lift device; and
interrupting the operation of the drive assembly in response to the detection of the approaching object.

39. (Previously Presented) The method of Claim 38, wherein providing a sensor module includes providing a sensor module having at least one through-beam detector, and wherein detecting an approaching object includes detecting an approaching object using the through-beam detector.

40. (Previously Presented) The method of Claim 38, wherein providing a sensor module includes providing a sensor module having a first proximity sensor adapted to monitor a first scanning region approximately along a first scanning axis, and a second through-beam sensor adapted to monitor a second scanning region approximately along a second scanning axis, wherein the first and second scanning axes are approximately orthogonal.

41. (Previously Presented) A method for assembling aircraft, comprising:
approaching an aircraft component with a lift device;
indicating a direction a steering device of the lift device is turned;
detecting the aircraft component proximate to a portion of the lift device;
interrupting a motion command from being communicated to a drive component driving a motion of the lift device towards the aircraft component; and
stopping the lift device.

42. (Canceled)

43. (Original) The method of Claim 41, further comprising displaying a warning to the worker of the aircraft component being proximate to a surface of the lift device.

44. (Previously Presented) An apparatus, comprising:
a lift device including a drive assembly;
at least one sensor module operatively coupled to the lift device, the sensor module being adapted to monitor a plurality of scanning regions proximate the lift device for the presence of an approaching object and to detect the approaching object prior to physical contact with the approaching object, wherein at least two of the scanning regions are approximately orthogonally disposed relative to each other; and
a controller operatively coupled to the sensor module and operatively coupled to the drive assembly, the controller being adapted to interrupt operation of the drive assembly in response to a detection signal from the sensor module.

45. (Previously Presented) The apparatus of Claim 44, wherein at least two of the scanning regions are approximately disposed about a scanning axis, and wherein the scanning axes of the at least two scanning regions are approximately orthogonal.

46. (Previously Presented) The apparatus of Claim 44, wherein the sensor module includes a first proximity sensor adapted to monitor a first scanning region approximately along a first scanning axis, and a second through-beam sensor adapted to monitor a second scanning region approximately along a second scanning axis, wherein the first and second scanning axes are approximately orthogonal.

47. (Previously Presented) The apparatus of Claim 44, wherein the sensor module includes a first proximity sensor adapted to monitor a first scanning region approximately along a first scanning axis, a second proximity sensor adapted to monitor a second scanning region approximately along a second scanning axis, and a third through-beam sensor adapted to monitor a third scanning region approximately along a third scanning axis, wherein the first, second, and third scanning axes are approximately orthogonal.

48. (Previously Presented) The apparatus of Claim 44, wherein the sensor module includes a first proximity sensor adapted to monitor a first scanning region approximately along a first scanning axis, a second through-beam sensor adapted to monitor a second scanning region approximately along a second scanning axis, and a third through-beam sensor adapted to monitor a third scanning region approximately along a third scanning axis, wherein the first, second, and third scanning axes are approximately orthogonal.